TITLE:

A STUDY OF THE NATURE OF THE SOCIAL MASS

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CITATION:

Ninagawa, Torazo. A STUDY OF THE NATURE OF THE SOCIAL MASS. Kyoto University Economic Review 1931, 6(1): 58-70

ISSUE DATE:

1931-07

URL:

https://doi.org/10.11179/ker1926.6.58

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Economic Review

MEMOIRS OF
THE DEPARTMENT OF ECONOMICS
IN
THE IMPERIAL UNIVERSITY OF KYOTO

VOLUME VI
1931

PUBLISHED BY THE DEPARTMENT
OF ECONOMICS IN
THE IMPERIAL UNIVERSITY OF KYOTO

A STUDY OF THE NATURE OF THE SOCIAL MASS

1. PREFACE

In the science of statistics, "soziale Massen" is a fundamental concept. At least, it is a proper subject for study in many German schools of the science of statistics. I can, for instance, quote the following passages from books written by two eminent statisticians:—

„Die Statistik hat zunächst ein eigenartiges Objekt: die Massenbeobachtung"[1].

„Am vollkommensten wird diese Erforschung der sozialen Massen durch die erschöpfende Massenbeobachtung ihrer Elemente in Zahl und Mass bewerkstelligt. Die so geartete wissenschaftliche Erforschung der sozialen Masse nennen wir Statistik"[2].

The definitions given by statisticians in the past of the concept of what they call "Massen" or "soziale Massen" can hardly be accepted as very clear, however, if viewed in the light of many problems in the present-day science of statistics. They rather err on the side of commonsense, and it even appears that this concept has been applied without critical analysis. And yet, all theories in the science of statistics are formed with this concept as their essential premise. That the science of statistics should have such an indefinite concept as the starting-point of theorising tends to weaken its scientific character and to impede the study of statistical problems.

1) Franz Žizek, Grundriss der Statistik, 2te Afl., München u. Leipzig 1923, S. 1.

2) Georg von Mayr, Statistik und Gesellschaftslehre, 1. Bd. 2te Afl., Tübingen 1914, S. 8.

For the above-mentioned reason, I wrote an article[1] some time ago, in which I defined and explained the concept of the social mass. As far as my scanty knowledge goes, Dr. Paul Flaskämper[2] is the only other scholar who has ever published an article on the same subject. In doing so, he was prompted by the same doubt as I entertain, and in his article he analysed very closely what is called "Massen" in the science of statistics ("statistische Massen" according to him). His study is both very valuable and very suggestive in that it clearly points out where problems calling for research in regard to the social mass exist, but my point of view does not necessarily tally with his. My way of handling the problem differs rather widely from his.

The present article is an epitome of the more important points dealt with in my previous study already referred to. Accordingly, it is not intended for a comprehensive study of the characteristics of the social mass. Nor has it for its direct object a criticism of Dr. Flaskämper's conclusions on the same subject. Reference may, however, be made to the Doctor's views in so far as my treatment of the subject offers a contrast with his.

2. ATTITUDE AND METHODS OF STUDY

It is self-evident that "Massen", as it is called in the science of statistics, is a concept which presupposes individuals, for otherwise the difference between the two will be merely in regard to the magnitude of one body. Our object does not, therefore, consist in differentiating what is called a mass from individuals. It lies in making it clear why the special kind of mass in the science of statistics must be defined in contradistinction to a mass in the general

1) A Study of the Nature of the Theory of Economic Statistics. Keizai-Ronso Vol. 25, No. 4, 1927.

2) P. Flaskämper, „Beitrag zu einer Theorie der statistischen Massen". Allgemeines Statistisches Archiv, 17 Band, 4te Heft, 1928.

sense, and what its characteristics are which distinguish the one "mass" from the other. When we say "soziale Massen" or "statistische Massen", the words "sozial" and "statistisch" are by no means meaningless adjectives; they denote the statistical characteristics which mark the mass. The theoretical grounds on which such prescription is based can be sought by no other means than analysing both the scientific nature of statistics and the essential character of the theory of statistics. There are, I repeat, no other means available. As one concrete means, it may be suggested that the essential character of "Massen" should be made clear by classifying and assorting what are known in the science of statistics by the name of "Massen". But this can hardly be described as a correct method. For it is impossible to classify and assort things without any theoretical grounds for doing so. Such grounds are furnished only when the essential character of the science of statistics and statistical methods are made clear.

Let the science of statistics be "materielle Wissenschaft" or "Methode", there is no impugning the fact that it is one branch of science which falls within the domain of social science. In other words, both objects for study and methods to be used must essentially be of the nature of the social sciences. For the science of statistics is based on cognition, and grasp of social theory is the fundamental premise from which the study of all problems in the science of statistics must proceed.

No matter what formal definition may be given of the science of statistics (here, the German science of statistics is exclusively kept in view), the fact is undeniable that it is, in fact, fundamentally concerned with what is called "Massenbeobachtung". In this connection, many problems, theoretical and technical, claim attention, but what are aimed at may, after all, be reduced to the following three points:—(a) to fix the magnitude of the mass, (b) to determine, in terms of quantity, the existence of the characteristics of the mass, and (c) to determine the intensity of the exis-

tence or expression of the these characteristics.

The scientific significance of this method is in knowing and grasping, in terms of quantity, the nature of the phenomena or of the facts inherent in the mass, not in individuals. To this end, what is called "Einheit" is first defined in the science of statistics so as to determine the fundamental nature of a mass, while, at the same time, determining the magnitude of the mass by counting or measuring these "Einheit" and also defining "Merkmale" in advance, thereby comprehending the characteristics of the mass. And then, the quantity of "Einheit" possessing these characteristics is found. The percentage of the magnitude of that part of the mass which belongs to a specified "Merkmal" to that of the mass itself represents the intensity of the existence or manifestation of the portion possessing these specific characteristics.

I do not, of course, think that this alone covers the problem of the science of statistics, but at least I can say that many schools of the German science of statistics have these two points as their characteristics. All that we have to do is to find out the limitations which a mass in a general sense suffers when it assumes the characteristics of the mass in the sense used in the science of statistics.

3. THE MEANING OF "MASS", AS IT IS UNDERSTOOD THE SCIENCE OF STATISTICS

The nature of the science of statistics, as described above, presupposes the following statements in respects of the mass in question:—(a) The mass means, not one in a general sense, but one whose existence is social, (b) the nature characteristic of the mass as a social entity manifests itself in different forms and degrees in individual factors constituting it, and (c) the magnitude of the mass is recognisable quantitatively.

It is hardly necessary to point out that, so long as the science of statistics belongs to social science, the mass in

this science must be confined to that which is social. I mean by "social" that the existence of the mass is regulated socially, independently of the will of the investigators of such mass. In a general sense, a mass is a group of individuals. From this point of view, a mass embodying a natural existence is as much a mass as one which is formed consciously, but the mass with which the science of statistics is concerned must be treated differently from the other, in that its existence is regulated socially. For instance, a mass of the unemployed is an entity which is regulated by its social relations, independently of the will of the investigators of it. In other words, it is a natural outcome of the social relations of production.

From this point of view, Professor von Mayr is quite right in calling it "soziale Massen". It is, indeed, with the social mass that the science of statistics is concerned. If the mass is deprived of its social nature, it ceases to be a subject for discussion in the science of statistics.

Such being the case, in so far as a mass is studied in the science of statistics, its fundamental characteristic must needs be its social nature. The science of statistics essays to make clear quantitatively the social existence and social nature of this mass. In this respect, it is different from natural science, for the latter is concerned with the material existence and material nature of things. Natural things are not always social, but social matters are natural things at the same time. So when social science deals with social matters, its object is to find their social nature, not their material nature. This is true none the less for their having a material background. The mass which the science of statistics handles may be material by nature, but it is not because it is material by nature that it claims attention in the science, which constitutes a branch of social science. This is quite obvious, and yet it sometimes happens that in the domain of social science, scholars deliberately close their eyes to actualities by regarding social phenomena in the light of natural phenomena or they commit such mistakes

through their lack of perception. No matter which is the cause, scientifically it must be denounced. Many people utilise statistics as revealing objective facts, but if in "Massenbeobachtung" there is, at the start, such a lack of perception or a mistake deliberately committed, how can we make use of statistics either in the study of social science or in actual social life.

Next, in the science of statistics, is assumed that the characteristics of the social mass manifest themselves in the individual foctors constituting it. It is this assumption that enables us to lay down one fundamental characteristic of the specified social mass so that we can take those which possess this characteristic as "Einheit" and those which do not possess it as "Merkmale". It is needless to say that what is intended to be discovered is the social nature of the mass. So, "Massenbeobachtung" presupposes but the existence of social mass and the social existence of its concrete component factors in which its social nature manifests itself. In other words, this shows that the social mass does not merely represent large quantity. In the sense already stated, quantity is an essential condition for "Massenbeobachtung" as it is called in the science of statistics, but quantity indicates the magnitude of the material existence of the social mass, or, in other words, the magnitude of the social mass or that of part of it. Quantity does not by itself constitute a condition for the formation or existence of the social mass; it is simply one attribute of it. Such being the case, the "Einheit" of the social mass must either be measured or counted, as its material nature demands, in denoting its magnitude.

What is designated as "Massen" in the science of statistics is, as a rule, a social mass composed of "Einheit", the independent existence of which is clearly shown by its material nature, as, for example, various instances of population statistics or houses, etc., but since the "Einheit" of the social mass is defined, as already explained, not with reference to its material nature, but with an eye to its social

nature, there is no warrant for confining the attention to such material objects. The amount of the rice harvest, the output of electricity, the acreage of arable land, the mileage of railway lines, or other things can also be mentioned as the magnitude of the social mass, (for example, socially produced rice or electricity, etc.,) and accordingly as one which possesses a certain amount of "Einheit". Electricity and rice are, if viewed from the standpoint of natural science, of exactly the same nature. No distinction can be found in any part of them. Socially speaking, however, they cannot always be treated as of the same nature. In their social nature—in their important social nature—as, for example, in respect of their producers, places where they are produced, the time for their production, etc., we discriminate their material existence. This is important in their bearings on the actual social life and consequently of importance for the study of social science[1]. In this respect, "Massenbeobachtung" falls into a category entirely different from a survey of roads by engineering experts or the estimation of plankton collections by biologists. Denial of the existence of the "Einheit" in such a social mass is tantamount to the denial of the very existence of the social mass. In that case, measurement will merely be about the quantity of one material object. If so, where can be the difference between the science of statistics and the methods of measurement in natural philosophy? In view of the historical nature of the science of statistics and its importance to the study of present-day social science, the mistake of confounding them must, of course, be obvious to all.

Dr. Flaskämper divides the statistical mass into two

1) But as a matter of fact, the output, the quantity in possession, and the amount of business transacted are dealt with as one characteristic of the social mass of producers, possessors and parties to the transactions, and consequently Žižek recognises continuity in the quantitative nature of the "Merkmale". This is, indeed, a correct view, for in this case, it is their material quantity that matters.

kinds—the one discontinuous and the other continuous. This is a result of his confounding the science of statistics with the methods of measurement in natural philosophy. In making this classification, his attention is solely directed to the quantity of what is usually regarded as the mass in the statistical sense. It is no wonder that such a conclusion should be drawn, since there is, generally speaking, both discontinuity and continuity in quantity—a fact which is so obvious that it hardly needs his exposition. This nature, however, does not militate against the existence of the "Einheit" in a social mass of this kind. The fundamental mistake of his novel theory lies where he completely ignores the social nature of "Massen", and regards it is indicating the mere quantity of a natural object. In my opinion, it was for the purpose of precluding such misconceptions that German statisticians made a judicious use of the words "soziale Massen" or "Erhebungseinheit". To me, at least, these words sound very significant—more significant, perhaps, than the originators intended them to be.

In short, the question of taking or not taking certain social phenomena or facts as the social mass is a matter of social knowledge. It depends on how social theory is perceived. In order that it may form a subject for study in our science of statistics, the social mass must of necessity be amenable to quantitative recognition. This is an outcome of the characteristics of statistical methods of study, which are both concrete and quantitative. It by no means implies that perception of the social mass is dependent on its material nature. The material quantity is merely taken as the form of signifying the magnitude of some special social nature. As already stated, the existence of a certain social theory is necessary for the study of the science of statistics. Under such a theory is the statistical perception of the social mass possible. "Massenbeobachtung" is no mere technic. It has within its scope many subjects for theoretical study. I have many things to say on this point, but in the present article I shall content myself with citing one of the instances

given by Dr. Flaskämper.

According to Dr. Flaskämper, the national wealth lacks a homogeneous nature, logically speaking, even if it may have technical "Einheit". The individual factors constituting the national wealth may, as he says, be heterogeneous, but how can we, then, explain the fact that the national wealth is always represented by the currency unit, such as Yen, Dollar or Pound, except on the ground that the heterogeneous components of the national wealth have in common a nature capable of representation in terms of the currency? In that they are all things of social value, they have an absolutely common nature. And yet, Dr. Flaskämper says that they have no common nature! I will, however, refrain from any further discussion of points of difference between the social and material nature of the national wealth, as nothing will be gained by repetition. I must, however, repeat here that our science of statistics does not from park of the natural sciences!

4. THE SOCIAL MASS AND STATISTICS

It must be clear from what I have already stated that the social mass cannot be viewed in the same light as the mass of living things which biometricians make up according to their objects of study. For instance, when a biometrician studies the relation of the age and the length of eels, he chooses, as far as possible, materials which possess in common the various conditions other than age, which according to biological theories, influence the growth of eels. He selects as materials for his study eels which are of the same variety and sex and which have lived in identical conditions, etc. In order to obtain the most probable and stable result, he tries to collect as many materials as he can. He will then very carefully examine the annual rings of their otoliths and measure their length. The data obtained in this way serve as the materials for what he calls statistical analysis. In this case, the mass which has

furnished these data may well be regarded as one "Merkmal", that is to say, one consisting of things ruled by the same conditions, biologically at least, in reference to matters other than age. The magnitude of this mass is optionally fixed by the student with due regard to the stability of the result of his study. As the standard of this magnitude, the "law of large numbers" is generally mentioned. It is otherwise with the social mass. In the social mass, it is taken for granted that whereas its components have a certain specific social nature in common, they are rather different from one another in respect of other social nature. Such being the case, a variety of "Merkmale" are set up and the form and degree in which the social nature of the social mass manifests itself in their components are sought. As to the magnitude of the mass, it is determined socially. It is not fixed, as in the case of the study of eels referred to, by the will of the student concerned. In this sense, the "law of large numbers" does not furnish any standard for the so-called "Massenbeobachtung".

Although, in the two cases given above, they are called by the same name of mass, they are entirely different in nature. They can be treated in the same way only when the social mass is denuded of its social nature. At least, in so far as "Massen" as the social mass is called in the science of statistics, is concerned, Dr. Flaskämper's classification of "statistische Massen" into two kinds—one homogeneous and the other heterogeneous—is absolutely meaningless, for the social mass is always heterogeneous. It cannot be accepted as the standard for classifying the social mass, though it may constitute a criterion for differentiating the social mass from other kinds of mass. At any rate, Dr. Flaskämper has always treated "statistische Massen" as "Massen" in a general sense, not as the social mass, and so, in so far as his interpretation goes, his classifications is tenable. For the same reason, it must be said that he entirely loses sight of the essential nature of the social mass, notwithstanding the fact that his purpose was

to get hold of its essential nature.

For the above reason, we cannot view statistical data in the same light as data of measurement. Statistics or statistical data represent the quantitative recognition and knowledge of the social mass. In other words, they embody a mass of figures showing the result of "Massenbeobachtung". They indicate part amount of the social mass representing the magnitude and the special nature of the mass. It, therefore, follows that statistics mean a statement of figures regarding the social mass at a certain time and at a certain place. It is hardly necessary to point out that these figures are entirely different in nature from those showing the annual rings of otoliths or the length of eels living under identical conditions, as mentioned in the instance already given.

In actual study, however, we make use of statistical data in the same way as data of measurement. For instance, when we try to find out the most probable age of the unemployed, we collect statistical figures secured by many unemployment investigations and from groups of these statistical figures with each set of statistics as one instance. In this case, each individual statistical figure may well be compared to the value of measurement of each eel in the case already given. Although, as a matter of fact, these statistics are not homogeneous, they may be regarded as such in social scientific researches. In fact, in many researches, the homogeneous nature is assumed in examining statistical figures. In short, in what is called statistical study, the demand for homogeneity is a matter of degree, and not absolute. Systematic groups of statistics of this kind are generally called a statistical series. Inasmuch as a statistical series means quantitative expression in regard to a specific social nature, the difference refers solely to quantity. In so far as this phase of the question is concerned, it is the same as a series of values of measurement. It, therefore, follows that if quantity is of a continuous character, the series is also continuous.

The concept of "Massen" or "Massenerscheinung" in the science of statistics has hitherto been very ambiguous and confused, because not only was there a lack of a clear conception of the social mass but no clear line of demarcation was drawn between "Massenbeobachtung" and methods of statistical analysis in statistical methods, with the natural result that there was a very imperfect knowledge of the respective nature of "soziale Massen", statistics and statistical series. Statistical problems are no longer confined to population statistics, but are extended in scope to economic statistics. Moreover, they require good social knowledge. This notwithstanding, the science of statistics has hitherto been confined within the formal definition of the old and technical "Massenbeobachtung" or been concerned with mere problems of mathematical analysis of a statistical series. There has obviously been a lack of introspection and criticism backed by social consciousness[1]. I think I shall have occasion to deal with this phase of the problem some time in the future.

5. CONCLUSION

The only way to make clear the essential nature of "Massen", as it is called in the science of statistics, is to analyse the nature of both the science itself and statistical methods.

When the question is approached with this mental attitude, we can see that the so-called "Massen" means a socially defined mass, or, in other words, a social mass. As it is a mass, it is composed of parts which are independent of one another. The individuality of these parts is ruled by social nature, not by material nature. Such being the case,

1) Especially, the "Methodiker" in the science of statistics, and most British and American statisticians put a wide construction on statistical methods, and make no distinction between these methods in social science and those in natural science. It is, however, important that the statistical methods in these two big branches should be distinguished from each other.

it is impossible to deny the existence of the "Einheit" in the material quantity of the social mass, because it is continuous. It is simply absurd to talk of a social mass devoid of "Einheit".

By its very nature, the social mass is heterogeneous. There can be no homogeneous social mass. It is, therefore, impossible to classify the social mass according to much mistaken lights.

There must be a clear distinction between the social mass, statistics (statistical data), which embody the result of its quantitative perception, and the statistical series formed in order to secure the stable and quantitative results regarding the specific nature of the social mass. A lack of clear distinction between them leads to the misconception under which attempts are made to classify the social mass according to its continuity and discontinuity, or its heterogeneity and homogeneity. It also often gives rise to mistaken beliefs regarding the nature of the law of large numbers and the scope of its application.

There are many other problems awaiting solution in regard to the social mass. In the present article, I have confined myself to giving the résumé of a more comprehensive article which I published previously regarding its fundamental nature. The persistence[1] by Dr. Flaskämper in his view has further encouraged me to write the present article in the belief that an article like this will prove of some value.

1) P. Flaskämper, Statistik (Mayer's Wörterbücher). Halberstadt 1930, S. 52.

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